

Claim Rejections - 35 U.S.C. §112, second paragraph

Claims 1-15 and 33-43 were rejected under 35 U.S.C. §112, second paragraph. Claim 14, upon which claim 15 is dependent, has been amended to depend from claim 13. Therefore, proper antecedent basis has been provided for "said relay" in claim 15. Claim 34 has been amended to specify "said exciting element" such that proper antecedent basis is provided. Reconsideration and allowance is requested.

Claim Rejections - 35 U.S.C. §103

Claims 1-15 and 33-43 were rejected under 35 U.S.C. §103 as being unpatentable over United States Patent No. 5,132,665 to Hutchinsonson in view of United States Patent No. 5,549,362 to Broome. Applicant respectfully requests reconsideration and withdrawal of the rejection.

As the primary invention, Hutchinsonson discloses a self-powered back up alarm 10 which is mounted on wheel hub 12 of a heavy truck or like vehicle. The alarm 10 includes a housing 14 mounted on the wheel hub 12. A power supply 70, an alarm circuit 72, sensors 20a, 20b and an audio alarm 22, which is a piezoelectric element, are provided in the housing 14. The sensors 20a, 20b, in combination with the alarm circuit 72, produce a reverse motion signal whenever the vehicle backs up. The audio alarm 22 is actuated by the reverse motion signal and emits an audible warning whenever the vehicle backs up. This primary invention of Hutchinsonson does not relate to the braking system whatsoever.

Hutchinsonson also discloses in Col. 7, lines 6-22 that the invention is not limited to a self-powered back up alarm. Hutchinsonson discloses that the hub-mounted power supply 70 can be used to power sensors other than those used to detect forward/reverse motion. In Col.

7, lines 11-22, Hutchinsonson discloses that:

Alarm circuit 72 can, for example, be replaced with sensors and associated circuitry designed to monitor both speed and direction of wheel rotation. Signals produced by this circuit could then be forwarded to a central processing unit in the vehicle by a low-powered transmitter also located in housing enclosure 34 and activated by power supply 70. By providing all four wheels of a vehicle with this type of speed monitoring and reporting system, a processor would have essentially instantaneous speed information for each wheel that it could then use to control steering and/or braking.

As Hutchinsonson states in this excerpt, the alarm circuit 72 is **replaced** with sensors and associated circuitry designed to monitor both speed and direction of wheel rotation and this information is forwarded to the processor to control **steering and/or braking**. In this alternative embodiment disclosed by Hutchinsonson, the alarm function is **eliminated** because it is **replaced** by the sensors and associated circuitry designed to monitor both speed and direction of wheel rotation. Hutchinsonson is clear that in this alternate embodiment, the processor is only used to control **steering and/or braking**, and does not provide an alarm function.

Independent claims 1 and 11 claim that the electronic control module of the braking system interprets and uses the signals from the sensors to perform a back-up warning function. Hutchinsonson clearly does not contemplate an alarm function in this alternate embodiment. Any interpretation of Hutchinsonson in this regard can only be done with hindsight after reading Applicant's disclosure of its invention.

The addition of Broome does not solve the deficiency in Hutchinsonson. Broome discloses a conventional braking system which can be used to perform an ABS function.

Therefore, Applicant submits that the combination of Hutchinsonson and Broome does not render obvious claims 1-15 and 33-43. Reconsideration and allowance of claims 1-15 and 33-43 is respectfully requested.

With further regard to claims 8 and 10 and new claim 44, Applicant agrees with the Examiner that a J560 connector is an industry standard to connect electrical components. It appears that the Examiner has found it obvious to use a J560 connector as the voltage source instead of the hub-mounted power supply 70 of Hutchinsonson. Provided Applicant's understanding is correct, Applicant disagrees with the Examiner in this regard. Hutchinson clearly teaches the use of the hub-mounted power supply 70 because as discussed in the Background of Invention section of Hutchinsonson, "Attaching an alarm to a vehicle so that it is connected to the electrical system further adds to the complexities of installing and maintaining the alarm." Hutchinsonson has provided the hub-mounted power supply 70 on the hub to do away with this complexity. Therefore, to provide the J560 connector as the power supply would be against the express teachings of Hutchinsonson. Reconsideration and withdrawal of this rejection is respectfully requested.

The Specification

The Specification has been amended to update the status of Serial No. 09/306,921.

A version of any replacement paragraphs, on separate pages from the amendment, marked up to show all the changes relative to the previous version of the paragraphs (underlining or bracketing) is also provided herewith in conformance with 37 C.F.R. 1.121(b)(1)(iii).

A version of any amended claims, on separate pages from the amendment, marked up to show all the changes relative to the previous version of the claims (underlining or bracketing) is also provided herewith in conformance with 37 C.F.R. 1.121(c)(1)(ii).

A clean version (no underlining and bracketing) of the entire set of pending claims, on separate pages from the amendment, is also provided herewith as detailed in 37 C.F.R.

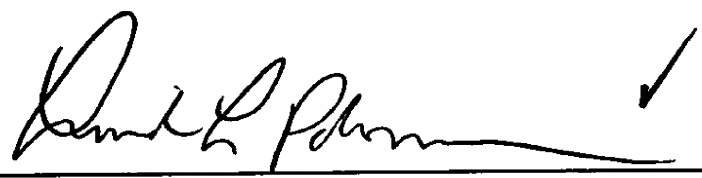
1.121(c)(3).

A Petition for a Two-Month Extension of Time is enclosed herewith to extend the date for response up to and including October 7, 2002.

In view of the above Amendments and Remarks, Applicant respectfully submits that the claims of the application are allowable over the rejections of the Examiner. Should the Examiner have any questions regarding this Amendment, the Examiner is invited to contact one of the undersigned attorneys at (312) 704-1890.

Respectfully submitted,

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By:  ✓

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**MARKED UP VERSION OF REPLACEMENT PARAGRAPHS
IN CONFORMANCE WITH 37 C.F.R. 1.121(b)(1)(iii)**

Paragraph on page 3, lines 16-23

As shown in FIGURE 1, the wheel speed sensors provide wheel speed information to the electronic control module (ECM) of the anti-lock brake system. The ECM signals the pneumatic control module (PCM) of the anti-lock brake system to modify air pressure level at the brake chambers. The braking level is controlled so that the wheels continue to rotate, or at least rotate most of the time, even during heavy braking. The overall process is described in detail in numerous patents and in the pending United States patent application Serial No. 09/306,921, now United States Patent No. 6,264,286, which is commonly owned by the assignee herein.

Paragraph starting at page 9, lines 7-25

A block diagram for an anti-lock brake system (ABS) or an electro-pneumatic brake system (EBS) for a trailer 26 in accordance with the present invention is shown in FIGURE 3. The present invention provides a wheel sensing arrangement, more specifically described with respect to FIGURE 9, which provides speed and direction information to a controller, such as an electronic control module (ECM). Power (12 Volts) to the ECM is supplied from pin 7 of the J560 connector 18 between the tractor 16 and the trailer 26. The ECM controls a pneumatic control module (PCM) which controls the air brake mechanism on the trailer 26. The ECM also controls the function of circuitry, such as a back-up system which is used to sound an audible back-up alarm, which is performed using suitable means, and/or light a back-up lamp, as described herein. The ECM of the ABS or EBS signals the PCM of the ABS or EBS to modify air pressure level at the brake chambers. The braking level is controlled so that the wheels continue to rotate, or at least rotate most of the time, even during heavy braking. The overall process is described in detail in numerous patents and in the pending United States patent application Serial No. 09/306,921, now United States Patent No. 6,264,286, which is commonly owned by the assignee herein and which is incorporated by reference. The present invention uses a wheel speed and direction sensor 20 which is mounted in the end of an axle 22 of a wheel mounting apparatus 24 of the trailer 26 as described herein.

**MARKED UP VERSION OF AMENDED CLAIMS IN
CONFORMANCE WITH 37 C.F.R. 1.121(c)(1)(ii)**

11. (Twice Amended) A braking and back-up warning system for a vehicle having at least one wheel, said system comprising:
- a brake mechanism;
 - a pneumatic control module connected to said brake mechanism;
 - at least one of structure for sounding an audible alarm and for lighting a lamp;
 - an electronic control module connected to said pneumatic control module and to said at least one of [said] structure for sounding an audible alarm and for lighting said lamp;
 - a voltage source connected to said electronic control module; and
 - a circuit which includes at least one sensor configured to sense movement of the wheel, said circuit configured to provide at least one signal to said electronic control module relating to the speed of the wheel which is sensed by said circuit and provide at least one signal to said electronic control module relating to the direction of the wheel which is sensed by said circuit, said electronic control module configured to selectively connect said voltage source to at least one of said structure for sounding an audible alarm and for lighting said lamp, depending on the at least one signal which is received from said circuit relating to the direction of the wheel which is sensed by said circuit.
14. (Once Amended) A system as defined in claim [11] 13, said electronic control module further comprising a controller which is configured to receive said at least one signal from said wheel sensing arrangement relating to the speed and direction of the wheel which is sensed by said circuit.
34. (Once Amended) A system as defined in claim 1, wherein wheel sensing arrangement comprises an exciting element and a sensor member, said sensor member having at least one sensing element mounted thereon for use in determining the speed of rotation of the wheel and for determining the direction of rotation of the wheel by sensing said exciting [ring] element.

44. (New) A system as defined in claim 11, wherein said voltage source is 12 volts provided by a J560 connector.